

# Syllabus

Course Number: ENV101

National College

Revised 11-2-2012

## **ENV101: Environmental Science**

Credit Hours: 4

Prerequisites: NONE

### **Course Description**

Environmental Science is a general course for non-biology majors in which students will explore the following basic principles: concepts required to understand interrelationships of the environment and the natural world; environmental problems both natural and man-made; risks associated with air, water, land pollution; health of humans and ecosystems; deforestation and climate change; overpopulation and environmental law, economics, and ethics.

### **Instructor Contact Information**

Instructor Name	Gerard Arthus
Instructor Email	Garthus801@gmail.com
Instructor Phone	Home: 574-217-8726 Cell: 631-335-5250

### **Course Length**

The college evaluates each course in terms of quarter hours of credit. One unit of credit is usually equivalent to a minimum of ten academic instruction hours of lecture and examination, twenty hours of skill development, or thirty hours of externship, or a combination of the three. An academic instructional hour is fifty minutes.

This class will meet for the equivalent of a minimum of 40 instructional hours or as otherwise scheduled by the college and at least in conformance with this minimum and the Syllabus. As specified under the Method of Instruction section of this Outline, the instructor will ensure that the minimum total class sessions presented consist of one hundred percent lecture. As specified under the Method of Instruction section of this syllabus, the instructor will ensure that the minimum total class sessions presented consist of direct faculty instruction or appropriate classroom activity.

All course offerings require outside preparation time, which is approximately two hours per lecture instructional hour and/or one hour per skill development instructional hour, depending on the background, interest, abilities, and motivation of the individual student.

### **Course Objectives**

Through in-class and out-of-class assignments and testing on criterion-reference instructions with a minimum score of 64% accuracy, the student will:

1. Understand the major environmental problems facing civilization
2. Appreciate the limits of science and technology in addressing environmental problems
3. Understand the impact environmental science has on daily living and working
4. Appreciate how philosophy and cultural norms impact the perception of environmental problems solutions
5. Effectively communicate and transfer scientific knowledge
6. Understand and define terminology used in environmental science
7. Summarize/describe global and regional environmental processes and systems
8. Evaluate environmental information and data using scientific principles and concepts
9. Discuss human impact on biotic communities, soil, water and air
10. Apply learned information to postulate environmental solutions and scenarios
11. Discuss the importance of the environment and ecology
12. Describe food chains and their workings

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13. Describe how ecosystems work and describe the energy flow in these systems
14. Discuss the importance of ethics in science
15. Discuss the importance of bio-diversity
16. List and describe the domains of life
17. Diagram and describe the interrelationships of organisms in the environment (ecosystem)
18. Discuss and describe ecosystems, ecological pyramids, nutrients and chemical cycles
19. Describe energy flow and transfer in our ecosystem
20. List and describe the factors regulating the cycles of water, carbon, chemicals and nitrogen
21. Discuss the importance of the sun in the atmospheric circulation

## Gradebook

A student's performance in this course will be evaluated using a variety of the areas listed below. Instructors must use a minimum of three (**homework, tests and a final exam are required**), and it is recommended that instructors use all five of the areas in your evaluation.

The exact weight to be given to any particular area is determined by the instructor and will normally fall within the ranges listed below.

Area	Percentage for this Course	Suggested Range
Final Exam	25%	20 – 25%
Tests	30%	20 – 40%
Homework	15%	10 – 15%
Project/Research Paper	20%	20 – 25%
Class Participation	10%	10 – 15%
TOTAL	100%	

Letter Grade	Points	Explanation
A	94-100	Excellent
B	84-93	Above Average
C	74-83	Average
D	64-73	Below Average
F	63 & Below	Failure

## Textbook & Instructional Material

Miller, G. Tyler and S. E. Spoolman. Environmental Science. 14<sup>th</sup> ed. Belmont, CA: Cengage, 2013.

The instructor might utilize additional instructional materials as provided by the publisher.

## Course Outline

**Term:**

<b>Class Date: 30 November 2012</b> <b>Chapter 1: <i>Environmental Problems, Their Causes, and Sustainability</i></b>	<b>Homework Due Date: 8 December 2012</b>
<b>In Class Activities –</b>	<b>Homework</b>
<p>Lecture Do the quiz for this week found on the web-assist site.</p>	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 30 November 2012</b> <b>Chapter 2: <i>Science, Matter, and Energy</i></b>	<b>Homework Due Date: 8 December 2012</b>
<b>In Class Activities -</b>	<b>Homework</b>
<p>Lecture and do the quiz for this week found on the web-assist site.</p>	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>

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<b>Class Date: 7 December 2012</b> <b>Chapter 3: <i>Ecosystems: What Are They and How Do They Work?</i></b>	<b>Homework Due Date: 15 December 2012</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 7 December 2012</b> <b>Chapter 4: <i>Biodiversity and Evolution</i></b>	<b>Homework Due Date: 15 December 2012</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site..	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>

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<b>Class Date: 14 December 2012</b> <b>Chapter 5: <i>Biodiversity, Species Interactions, and Population Control</i></b>	<b>Homework Due Date: 22 December 2012</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 21 December 2012</b> <b>Chapter 6: <i>The Human Population and Urbanization</i></b>	<b>Homework Due Date: 30 December 2012</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>

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<b>Class Date: 21 December 2012</b> <b>Chapter 7: <i>Climate and Biodiversity</i></b>	<b>Homework Due Date: 30 December 2012</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 28 December 2012</b> <b>Chapter 8: <i>Sustaining Biodiversity: The Species Approach</i></b>	<b>Homework Due Date: 7 January 2013</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>

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<b>Class Date: 28 December 2012</b> <b>Chapter 9: <i>Sustaining Biodiversity: The Ecosystem Approach</i></b>	<b>Homework Due Date: 7 January 2013</b>
<b>In Class Activities</b> Lecture and do the quiz for this week found on the web-assist site.	<b>Homework</b> Do the readings for this week found on the web-assist site.  Review the videos and tutorials for this week found on the web-assist site  Review the Power point Presentations for this week found on the web-assist site.  Complete the Discussion forum found on the web-assist site for this week.
<b>Class Date: 4 January 2013</b> <b>Chapter 10: <i>Food, Soil, and Pest Management</i></b>	<b>Homework Due Date: 12 January 2013</b>
<b>In Class Activities</b> Lecture and do the quiz for this week found on the web-assist site.	<b>Homework</b> Do the readings for this week found on the web-assist site.  Review the videos and tutorials for this week found on the web-assist site  Review the Power point Presentations for this week found on the web-assist site.  Complete the Discussion forum found on the web-assist site for this week.
<b>Class Date: 4 January 2013</b> <b>Chapter 11: <i>Water Resources and Water</i></b>	<b>Homework Due Date: 12 January 2013</b>

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<b><i>Pollution</i></b>	
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 14 January 2013</b> <b>Chapter 12: <i>Geology and Nonrenewable Minerals</i></b>	<b>Homework Due Date: 20 January 2013</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 14 January 2013</b> <b>Chapter 13: <i>Energy</i></b>	<b>Homework Due Date: 20 January 2013</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-	Do the readings for this week found on the web-assist



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assist site.	<p>site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 18 January 2013</b> <b>Chapter 14: <i>Environmental Hazards and Human Health</i></b>	<b>Homework Due Date: 26 January 2013</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 18 January 2013</b> <b>Chapter 15: <i>Air Pollution, Climate Disruption, and Ozone Depletion</i></b>	<b>Homework Due Date: 26 January 2013</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	Do the readings for this week found on the web-assist site.

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	<p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 25 January 2013</b> <b>Chapter 16: <i>Solid and Hazardous Waste</i></b>	<b>Homework Due Date: 1 February 2013</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 25 January 2013</b> <b>Chapter 17: <i>Environmental Economics, Politics, and Worldviews</i></b>	<b>Homework Due Date: 1 February 2013</b>
<b>In Class Activities</b>	<b>Homework</b>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site.</p> <p>Review the videos and tutorials for this week found on</p>

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	<p>the web-assist site</p> <p>Review the Power point Presentations for this week found on the web-assist site.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
<b>Class Date: 1 February 2013</b> <b>Final Exam and Project Presentations</b>	

**This course has an in-class final exam. Final exam date:**

## **Additional Final Exam Information:**

### **Method of Instruction**

Instructional techniques must be appropriate, and at a collegiate level, to the specific goals and objectives, i.e. intended learner outcomes, cited above. Students and instructors must have a clear understanding of the intended learner outcomes to be mastered and time requirements of the course, the nature of the course context, and the method of evaluation.

The method of instruction is primarily lecture and provides instruction in theory, principles, or practices of the discipline. The instructor will provide classroom presentations in a variety of lecture formats. Methods of instruction must fulfill the intended learner outcomes and competencies stated in the course goals and objectives and are appropriate to the capabilities of the students. For career oriented courses, the instructor must demonstrate that an effective relationship exists between curricular content and current practices in the field.

Effective instruction depends largely upon the maintenance of an environment conducive to study and learning. For this reason, the instructor must provide for his/her students a learning environment in which scholarly and creative achievement is encouraged in the classroom.

### **Additional Class Notes**

Go to <http://www.openeducation.org/moodle> to use the Web-Assisted site for this course. Quizzes and discussion forums will be completed on-line at this site; and all other assignments will be uploaded there.